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| 09/781,795      | 02/12/2001  | Malcolm F. Ruppert   | 60,130-1004         | 6956             |

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT PAPER NUMBER

3618

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/781,795

Applicant(s)  
Ruppert, Jr., et al.

Examiner  
Vanaman

Art Unit  
3618



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 26, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 23-41, 43-46, 48-55, 57, and 58 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41 and 43-46 is/are allowed.
- 6) ☒ Claim(s) 23-28, 32, 36-40, and 48 is/are rejected.
- 7) ☒ Claim(s) 29-31, 33-35, 49-55, 57, and 58 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 17 6) ☐ Other:

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### **Status of Application**

1. Applicant's amendment, filed Nov. 26, 2002, has been entered in the application. Claims 57 and 58 have been added, claims 23-41, 43-46, 48-55, 57 and 58 are pending.

### **Information Disclosure Statement**

2. Applicant's Information Disclosure Statement, filed Nov. 26, 2002 has been considered. In addition to the two references referred to in the PTO-1449 form, there appear to have been included several pages directed to an un-related application which pages appear to bear a reference number of 60,426-539. These pages do not appear to be pertinent to the instant application.

### **Claim Rejections - 35 USC § 102**

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 23-28, 38 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Dest et al. (FR 2,507,550, cited by Applicant). Van Dest et al. teach a driving unit assembly including first and second wheel hubs (3, between tires 1 and gear sets 5), which rotate about a lateral axis of rotation (axles 22, co-linear with the connection between 19 and 8), first and second upwardly extending electric motors (11) mounted on a common axle housing (23), driving first and second gear sets (13, 14, 15, 18, etc.) including a pinion and ring gear pair (13, 14) both of which are mounted so as to rotate with the sun gear (8) when the wheel hub rotates (through the remaining gear elements 18, 19), a longitudinal motor axis (along motor output shaft 12) being transverse to the lateral rotation axis, each motor longitudinal axis being spaced from the other, and first and second planetary gear sets (ring gear 6, planet gears 7, sun gear 8) incorporated into the wheel hubs (e.g., 2) and driven by the respective first and second gear sets, further including plural gear boxes (3, 10) for housing the first and second gear sets, the motors being mounted to the gear boxes (figure 2), the planetary gears being incorporated into the gear boxes (at 3).

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**Claim Rejections - 35 USC § 103**

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 23, 26, 32, 36, 37, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roe (US 3,161,083, cited by Applicant). Roe teaches a vehicle drive system including a pair of co-linear driving shafts (48) for driving wheels (22RL, 22RR) about a lateral rotation axis, first and second gear sets (30R, 30L), each wheel being drivable by a pair of electric motors (figure 3), mounted on a common longitudinal axis transverse and perpendicular to the driving rotation axis, each gear set including a pinion (64) and ring (66) set, as well as a planetary gear set (42, 46, 58), at least one of the motors of each motor pair (the rearward '#1' motors) being mounted to extend rearwardly from the lateral axis of rotation. The reference of Roe fails to specifically teach the use of wheel hubs to support the wheels. The provision of a wheel hub for the purpose of allowing a wheel to be rotatably supported on a vehicle is very old and well known, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the vehicle wheels of Roe with hubs (driven by the output shafts 48, for example) for the purpose of allowing the vehicle to easily move from one location to another.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roe in view of Van Dest et al. The reference of Roe is discussed above and fails to teach the planetary gear sets as being incorporated into wheel hubs. Van Dest et al. teach a wheel (1) having an electric motor (11) drive, wherein a gear set (e.g., 13, 14, 18, 19) drives a planetary gear set (6, 7, 8) located in the wheel hub. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a planetary gear set, as taught by Van Dest et al., driven by the gear set of Austin as modified by Quartullo, for the purpose of reducing the wheel axle running speed directly at the wheel.

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7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roe (US 3,161,083, cited by Applicant) in view of Kawamoto et al. (US 5,419,406, cited previously). The reference of Roe is discussed above and fails to explicitly teach the provisions of the gear sets as being mounted in gear boxes mounted to the motors. Kawamoto et al. teach a motor drive scheme wherein drive motors (e.g., 1) mounted in a housing (3a) are connected to a gear set (e.g., 2, 13) mounted in a gear box (3b) which is mounted to the motor housing (e.g., figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the gear sets of Roe in housings mounted to the motors as suggested by the incorporated motor and gear set housings of Kawamoto et al. for the purpose of containing the gears in an enclosed space, preventing foreign objects from interfering with the gear operation.

8. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Austin in view of Quartullo and Van Dest et al. Austin teaches a passenger vehicle having a plurality of seats located on higher floor portions and a centrally located aisle located on a lower floor portion, wherein an engine, for driving the vehicle wheels is located higher than the aisle floor. The reference of Austin fails to teach the wheels as being driven by electric motors mounted at a right angle to the wheel rotational axes and driving the wheels through a gearing system.

Quartullo teaches a vehicle having a body and a pair of wheels, each wheel driven by a motor through a 90 degree angle, the driving force being transmitted through a worm-drive gear set, and wheel axle to wheel hubs, wherein a floor of a vehicle has a lower extent in a central location, and an upper extent, wherein the motors are mounted vertically higher than the central floor portion. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the wheel driving engine of the vehicle of Austin with the individual electric drives taught by Quartullo for the purpose of allowing the driven wheels to be independently suspended, as suggested by Quartullo. The reference of Austin as modified by Quartullo fails to teach the gearing system as driving a planetary gear set.

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Van Dest et al. teach a wheel (1) having an electric motor (11) drive, wherein a gear set (e.g., 13, 14, 18, 19) drives a planetary gear set (6, 7, 8) located in the wheel hub. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a planetary gear set, as taught by Van Dest et al., driven by the gear set of Austin as modified by Quartullo, for the purpose of reducing the wheel running speed, and allowing higher speed motors to be employed.

#### **Allowable Subject Matter**

9. Claims 41 and 43-46 are allowed.
10. Claims 29-31, 33-35, 49-55, 57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Response to Arguments**

11. Applicant's comments, filed with the amendment, have been carefully considered. Applicant's request that the examiner provide a translation of a reference which has been originally cited by Applicant (and not by the examiner) is noted. A translation of this reference is unfortunately not available at this time. In addition, Applicant may desire to consider the entire portion of Ex Parte Gavin pertinent to the alleged requirement that an examiner provide a translation:

**When an examiner cites** and relies only on an abstract, the Applicant may wish to obtain a copy of the underlying document and submit a copy to the examiner when responding to a rejection relying on an abstract. In the event a reference is in a foreign language, if the applicant does not wish to expend resources to obtain a translation, the applicant may wish to request the examiner to supply a translation. If a translation is not supplied by the examiner, the applicant may wish to consider seeking supervisory relief by way of a petition (37 CFR § 1.181) to have the examiner directed to obtain and supply a translation. In the past, when neither the examiner nor the applicant rely on the underlying article, the board has often expended the resources necessary to obtain a copy of the underlying scientific article, as well as translations thereof. When it did so, however, the burden of examining the application fell on the board in the first instance. Moreover, to the extent that the board relies on parts of a translation not previously provided to an applicant,

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any affirmance generally has to be a new ground of rejection under 37 CFR §1.196(b)—which can result in further prosecution.[emphasis added]

In this case, Ex parte Gavin is not analogous in that the examiner was not responsible for the original citation of the reference, rather it was Applicant who was responsible for the original citation of the reference. Had the examiner been responsible for the original citation of the reference, it may be appropriate for the examiner to provide a translation.

As to the elements Applicant asserts are not taught by Van Dest et al., the examiner disagrees: the first and second driving shafts as claimed, being co-linear, are shown as elements 22, for example in figure 1; as regards the gear sets being mounted in a gear box, note that elements 3 and 10 correspond to a gear box to the extent claimed, furthermore, the planetary gear sets of Van Dest are located in the wheel hubs (2) and the gear boxes (3), so while Applicant implies that these are separate embodiments, the structure of the reference to Van Dest et al. simultaneously meets both sets of limitations to the degree they are currently claimed; Van Dest et al. additionally teach a ring and pinion gear set (13, 14) to the extent claimed-- please note that when the motor is running to drive the wheels, both the ring and pinion set and the sun gear would be rotating, in view of these gear-sets being connected to one another. As regards Van Dest et al. teaching a vehicle which is different from Applicants', this is confusing in light of the breadth of the claims, which claim only "[a]n automotive vehicle drive unit assembly". The drive taught by Van Dest et al. appears to be a drive assembly for an automotive vehicle to the breadth it has been claimed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As such, the reference to Van Dest et al. teaches the limitations as recited in applicant's claims 23-28, 38 and 39.

As regards the reference to Roe, the examiner agrees that there may be some confusion as to whether or not elements 30L and 30R refer to gear sets or assemblies in view of the somewhat inconsistent use between Roe's specification, the provision of separate reference numerals

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directed to the planetary gears, and the illustrations of figures 1 and 3. As such, the rejection of claim 25 as being unpatentable over only the reference to Roe is withdrawn, and the reference to Roe is applied in combination with Kawamoto et al. which does clearly teach the use of gearboxes. As regards the relative location of the motors and lateral axis of rotation in Roe, note that figure 1, which shows an overall configuration of the vehicle, illustrates the #2 motors being located forwardly of the axis, and the #1 motors being located rearwardly thereof. As regards the direction of power flow in Roe, please note that the ring and pinion gear set is entirely capable of driving the planetary gear set when the vehicle is coasting.

Applicant's comments directed to the references of Austin, Quartullo and Van Dest et al. appear to suggest that Van Dest et al. is non-analogous art. The examiner disagrees. It has been held that a prior art reference must either be in the field of Applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the reference to Van Dest et al. is directed to the same problem solving area, namely the application of electric motors through both a ring and pinion gear set and a planetary gear set to drive a vehicle wheel. Although the scale of the application to the reference to Van Dest et al. may be different than the scale to which Applicant's invention is directed, it is nevertheless deemed 'reasonably pertinent' in that it is directed to the same field: namely the driving of plural vehicle wheels through the use of plural electric motors.

In response to Applicant's argument that the examiner's conclusion of obviousness is based upon solely upon Applicant's disclosure (i.e., hindsight reasoning), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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As noted previously by the examiner, the mounting of a wheel on a wheel hub is old and well known. It is, of course, appropriate for Applicant to request the citation of documents which provide evidence of features being old and well known, and in this case several references cited by Applicant throughout the prosecution illustrate this well known feature-- for example: the U.S. Patent 4,089,384 to Ehrenberg, cited by Applicant in March, 2002, as a part of paper No. 9, which shows such a feature in figures 5, 6, 7, and 9. Alternatively, U.S. Patent 5,222,568, to Higasa et al. shows such a feature in figure 7. Similarly, U.S. Patent 3,933,217 to Eichinger shows such a feature in figures 1-3.

#### Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is (703) 308-0424. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-1113.

Any response to this action should be mailed to:

Assistant Commissioner for Patents  
Washington, DC 20231

or faxed to :


(703) 305-3597 or 305-7687 (for formal communications intended for entry;  
informal or draft communications may be faxed to the same number but should be  
clearly labeled "UNOFFICIAL" or "DRAFT")

The Office has also established electronic fax servers for Technology Center 3600 as follows:

703-872-9326 (Official communications)  
703-872-9327 (Official After Final communications)  
703-872-9325 (Customer Service)

**F. VANAMAN**  
**Primary Examiner**  
**Art Unit 3618**

F. Vanaman  
February 3, 2003

  
2/3/03